

REMARKS

Preliminarily, Applicant respectfully requests the Examiner to return initialed Form PTO/SB/08 A & B (modified) for the Information Disclosure Statements filed May 15, 2003 and June 6, 2003 (copies attached).

Additionally, Applicant requests the Examiner to return initialed Form PTO/SB/08 A & B (modified) for the Information Disclosure Statement filed May 17, 2002 (copy attached).

Review and reconsideration on the merits are requested.

Claims 1-5 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent 5,085,541 to Simpson. The Examiner cited Simpson as disclosing a cutting insert substantially as claimed, including an end cutting edge 46, rake portions 38 and 40 and depression 42 formed in the rake face so as to provide the cutting edge with a concave edge portion 42a.

Claims 6-10 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Simpson. Although acknowledging that Simpson fails to specify the claimed relationships between the concave edge portion and the depression depth and cutting edge width, the Examiner considered that it would have been within the level of ordinary skill in the art to develop optimum or workable ranges for these parameters.

Claims 11-20 were also rejected under 35 U.S.C. § 103(a) as being unpatentable over Simpson in view of U.S. Patent 3,754,309 to Jones et al. Jones et al was cited as disclosing an indexable insert. The reason for rejection was that it would have been obvious to modify the metal-cutting insert of Simpson to provide an indexable insert as taught by Jones et al.

In response, Applicant presents new claims 21-24 for the Examiner's consideration. Claims 1-20 have been canceled without prejudice.

An important feature of the present invention, as defined in new independent claims 21-24, resides in that $D_a < D_b$ where D_a is the maximum depth of the concave edge portion and D_b is the maximum depth of the depression, and that $W_a < W_b$ where W_a is the width of the concave edge portion of the end cutting edge and W_b is the maximum width of the depression.

In cutting, widthwise bending of a chip is obtained by the shape of the concave edge portion of the end cutting edge itself and the spherical depression formed in the rake face (see page 5, lines 21-26 of the specification). Accordingly, the cutting resistance is small and deformation of the chip can be obtained irrespective of the longitudinal feed speed of an insert, thus making it possible to obtain a stable chip deforming effect. Such an effect can be maximized or at least enhanced by the above-described feature of the present invention, which feature is neither taught nor suggested by the prior art.

For the above reasons, it is respectfully submitted that claims 21-24 are patentable over the cited references, and withdrawal of the foregoing rejections is respectfully requested.

Withdrawal of all rejections and allowance of claims 21-24 is earnestly solicited.

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Application No.: 10/022,365

In the event that the Examiner believes that it may be helpful to advance prosecution of this application, the Examiner is invited to contact the undersigned at the local Washington, D.C. telephone number indicated below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account. A duplicate copy of this letter is enclosed.

Respectfully submitted,



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PATENT TRADEMARK OFFICE

Date: July 9, 2003

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Application No.: 10/022,365

APPENDIX

VERSIONS WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Claim 1-20 have been canceled.

New claims 21-24 have been added.